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TOWNSEND and TOWNSEND and CREW LLP

By: _____

PATENT
Docket No.: 026549-000100US
Client Ref. No.: 30836

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Confirmation No.: 1519
Ronit Eisenberg	Examiner: Crowder, Chun
Patent No.:	Art Unit: 1644
Issued:	RULE 132 DECLARATION
Application No.: 10/009,809	
Filed: April 26, 2002	
For: CELL PENETRATING ANTI-ALLERGIC PEPTIDES	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Dr. Ehud Razin, being duly warned that willful false statements and the like are punishable by fine or imprisonment or both, under 18 U.S.C. § 1001, and may jeopardize the validity of the patent application or any patent issuing thereon, state and declare as follows:

1. All statements herein made of my own knowledge are true and statements made on information or belief are believed to be true. **The Exhibits (1 and _ attached hereto are incorporated herein by reference.**

2. I received a Ph.D. in Immunology/Cell Biology from the Weizmann Institute of Science in 1980.

A copy of my curriculum vitae is attached as Exhibit 1.

3. I am presently employed at the Hebrew University of Jerusalem and am primarily responsible for teaching and research.

4. I have read and am familiar with the contents of the application. I understand that the Examiner has a single rejection based on obviousness that is based on a combination of three references. The references are Holgate as a primary reference in view of Aridor and Lin. Holgate is cited as disclosing that agents that inhibit mast cell degranulation are recognized for treatment of diseases such as asthma. Aridor discloses KNNLKECGLY which is a mast cell activation inhibitor designated Gαi3 C-terminal peptide. Lin discloses the preferred cell penetrating peptide from Kaposi fibroblast growth factor [KFGF].

5. This invention is the surprising discovery that of four different cell penetrating peptides (CCP) only one CCP was able to successfully deliver two mast cell activation inhibitors in a biologically active manner. Because the prior art literature would suggest to those of skill that CCPs are interchangeable, it is surprising that the choice of CCP would be critical for obtaining biological activity. Accordingly, we have to conclude that the field of using cell penetrating peptides to deliver biologically active proteins is far less predictable than the Examiner believes it to be and that the applicants' results as embodied in the pending claims are both surprising and advantageous..

The following statements provide objective, scientific reasons for the above conclusion.

6. It is my understanding that the rejection of the pending claims is based on the proposition that Lin's teaching of the CCP, (AAVALLPAVLLALLAP) as a tool for delivery of biologically active cargo peptides renders the claimed combinations of AAVALLPAVLLALLAP in reading frame fusions with $G\alpha i_3$ or $G\alpha t$ C-terminal peptides obvious and unpatentable. In brief, the Examiner believes that upon reading the three references, one of skill would be motivated by Holgate to combine the KFGF CCP of Lin with the mast cell activation inhibitor of Aridor, $G\alpha i_3$ with a reasonable expectation that the combination would inhibit mast cell activation.

It is also my understanding that evidence of unpredictability or surprising results can legally refute this conclusion and lead to the rejection being withdrawn.

It is my further opinion that both unpredictability and surprising results have been demonstrated by the applicants' work and by the literature already of record.

7. More specifically, we know that of the four CCPs tested only one CCP was able to deliver the two mast cell activation inhibitors, $G\alpha i_3$ or $G\alpha t$, as a biologically active inhibitors. The table below summarizes Applicants' results as described in the specification and in the Jones et al. publication.

CHIMERIC PEPTIDE			RESULTS
Hu Int	$G\alpha i_3$	SEQ ID NO: 6	No inhibition of histamine secretion
KFGF	$G\alpha i_3$	SEQ ID NO: 7	**Inhibited histamine secretion**
Dros	$G\alpha i_3$	SEQ ID NO: 10	Induced histamine

			secretion
Hu Int	Gαt	SEQ ID NO: 11	No inhibition of histamine secretion
KFGF SEQ ID NO: 3	Gαt	SEQ ID NO: 12	**Inhibited histamine secretion**
Dros	Gαt	SEQ ID NO: 13	Induced histamine secretion
TP-10	$G\alpha i_3$	Jones *et al.*	No inhibition of beta-hexoseaminidase secretion

8. From this data, it is clear that only Lin's CCP, KFGF is able to both deliver mast cell activation inhibitors and maintain their biological activity as inhibitors of mast cell activation . The Examiner says that this is predictable from the literature. I respectfully disagree.

Lin discloses that KFGF sequence transported two biologically active cargo peptides and generally states that KFGF can be used to transport other peptides. But similar reports exist for each of the other CCPs tested by applicants. The Hawiger review article discloses that the CCP designated integrin β_3 is just as able as KFGF to transport functional peptides into a cell (see page 189, 2nd column). Finally Derossi *et al.* describes the *Drosophila* CCP as successfully delivering biologically active compounds inside live cells (page 18188, 2nd col).

From page 7 of the Office Action, the Examiner appears to interpret this literature as leading one of skill to believe that there is a reasonable expectation that any

combination of CCP with any biologically active peptide will lead to the observation of biological activity in a cell.

I respectfully disagree. There are several scientific and objective reasons why fusing a CCP to a biologically active peptide might not result in observation of expected biological activity. These reasons include improper folding of the fusion peptide resulting in conformational changes that render the cargo peptide inactive; the degradation of the foreign peptide; sequestering of the peptide a endosomes or the ability of the CCP sequence to trigger a biological response, such as mast cell degranulation (e.g. positively charged CCP might function as basic secretagogues of mast cells).

Indeed, this appears to be the case for fusion of CCP with either $G\alpha i_3$ or $G\alpha t$. The data from applicants' laboratory and from the Jones *et al.* group demonstrate that not any CCP can maintain the biological activity of $G\alpha i_3$ or $G\alpha t$. Of four CCPs, only KFGF was the only CCP able to both internalize and maintain the inhibitory activity of both $G\alpha i_3$ and $G\alpha t$. Thus the combination provides a surprisingly advantageous result that was not predictable from the prior art.

I do note the Examiner's statement on page 7 that the table on page 9 with reference to the prior literature describing the various CCPs fail to demonstrate that Lin's CCP is unpredictable as a delivery tool. While this is true, there was no academic reason *a priori* to believe that any of the other CCPs would fail to deliver $G\alpha i_3$ and $G\alpha t$ while maintaining its expected biologically activity. But the evidence established by the record indicates that this is not true. There is obviously something special about the two mast cell activation inhibitors or with Lin's CCP that makes the claimed combination functional compared to the other three CCPs.

For these reasons, I conclude without hesitation that the claimed combinations of AAVALLPAVLLALLAP with either $G\alpha i_3$ or Gαt to yield a functional inhibitory effect on mast cell activation in light of failure with three other CCPs of equal status was unpredictable, surprising and of great value.

This Declarant has nothing further to say.

Dated: May 6 2007

Dr. Ehud Razin Ehud Razin

CURRICULUM VITAE

Name:	Ehud Razin
Birthdate:	July 14, 1947
Marital Status:	Married (Michal), two children: Ayelet (1979), Jonatan (1986).
Title:	Professor of Biochemistry, Hebrew-University, Hadassah Medical School.
	Dr. Marcus Rabwin Chair in Cancer Research
Research Interests:	Biology of Mast Cells

EDUCATION:

1965 - 1968	Captain, Israeli Army
1970 - 1973	B. Sc. Biology - Hebrew University of Jerusalem
1973 - 1975	M. Sc. Microbiology - Hebrew University of Jerusalem
1976 - 1980	Ph.D. Immunology - Weizmann Institute of Science

PROFESSIONAL EXPERIENCE:

2005-	Dean Faculty of Medicine Hebrew University
2001-2005	Chairman of the Faculty's Planning & Development Committee
1998-2001	Chairman Biochemistry Department
1996-	Professor of Biochemistry
1997-8	Visiting Scientist of NIAMS, NIH
1993 July-December	Visiting Scientist, NIH, U.S.A.
1991-1996	Assoc. Professor in Biochemistry, Hebrew University of Jerusalem
1987 - 1991	Senior Lecturer in Biochemistry, Hebrew University of Jerusalem.
1983 - 1987	Lecturer in Biochemistry, Hebrew University of Jerusalem.
1982 - 1984	Research Fellow - Immunopharmacology, Harvard Medical School, Boston, MA, USA.
1980 - 1981	Research Fellow - Immunology, Memorial Sloan-Kettering Cancer Centre, NY, USA.
1989 - 1990	Visiting Professor, Biomedical Research Centre, UBC, Vancouver, Canada.
1987 - 1989	Consultant, Syntex Research Co., Palo Alto, CA, USA

AWARDS:

1979	DAAD Scholarship
1980	Chaim Weizmann Fellowship

SOCIETIES:

1983	American Association of Immunologists

1994 CoLLEGIUM INTERNATIoNALE ALLERGoLoGICUM (CIA).

1998 American Society for Biochemistry and Molecular Biology.

Ehud Razin:

Publications

1. Razin, E., Bauminger, S., Globerson, A. Effect of prostaglandins on phagocytosis of sheep erythrocytes by mouse peritoneal macrophages. J Reticuloendothel Soc 1978; 23: 237-42.
2. Razin, E., Zor, U., Globerson, A. Function of macrophage prostaglandins in the process of phagocytosis. Adv Exp Med Biol 1979; 121: 413-7.
3. Razin, E., Globerson, A. The effect of various prostaglandins on plasma membrane receptors and function of mouse macrophages. Adv Exp Med Biol 1979; 114: 415-9.
4. Razin, E., Razin, M., Lohmann-Matthes, M.L. The role of prostaglandins in the development of macrophages from bone marrow cells. J Reticuloendothel Soc 1980; 27: 377-82.
5. Razin, E., Rivnay, B., Globerson, A. Prostaglandins as modulators of macrophage development from bone marrow. J Reticuloendothel Soc 1981; 30: 239-46.
6. Razin, E., Rifkind, A.B., Cordon-Cardo, C., Good, R.A. Selective growth of a population of human basophil cells in vitro. Proc Natl Acad Sci U S A 1981; 78: 5793-6.
7. Razin, E., Hayari, Y., Globerson ,A. Effects of indomethacin on hematopoiesis in mice. Prostaglandins Med 1981; 6: 613-20.
8. Razin, E., Klein, B., Globerson, A. Effects of indomethacin treatment of human peripheral blood monocytes. Prostaglandins Med 1981; 6: 529-36.
9. Razin, E., Cordon-Cardo, C., Good, R.A. Growth of a pure population of mouse mast cells in vitro with conditioned medium derived from concanavalin A-stimulated splenocytes. Proc Natl Acad Sci U S A 1981; 78: 2559-61.
10. Razin, E., Mencia-Huerta, J.M., Lewis, R.A., Corey ,E.J., Austen, K.F. Generation of leukotriene C4 from a subclass of mast cells differentiated in vitro from mouse bone marrow. Proc Natl Acad Sci U S A 1982; 79: 4665-7.
11. Razin, E., Cordon-Cardo, A., Minick, C.R., Good, R.A. Studies on the exocytosis of cultured mast cells derived from mouse bone marrow. Exp Hematol 1982; 10: 524-32.
12. Razin, E., Stevens, R.L., Akiyama, F., Schmid, K., Austen, K.F. Culture from mouse bone marrow of a subclass of mast cells possessing a distinct chondroitin sulfate proteoglycan with glycosaminoglycans rich in N-acetylgalactosamine-4,6-disulfate. J Biol Chem 1982; 257: 7229-36.
13. Razin, E., Globerson, A., Skutelsky, E. Indomethacin modulates plasma membrane-associated properties of macrophages. Prostaglandins Leukot Med 1982; 8: 301-10.
14. Mencia-Huerta, J.M., Lewis, R.A., Razin, E., Austen, K.F. Antigen-initiated release of platelet-activating factor (PAF-acether) from mouse bone marrow-derived mast cells sensitized with monoclonal IgE. J Immunol 1983; 131: 2958-64.
15. Mencia-Huerta, J.M., Razin, E., Ringel, E.W., Corey, E.J., Hoover, D., Austen, K.F., et al. Immunologic and ionophore-induced generation of leukotriene B4 from mouse bone marrow-derived mast cells. J Immunol 1983; 130: 1885-90.
16. Razin, E., Mencia-Huerta, J.M., Stevens, R.L., Lewis, R.A., Liu, F.T., Corey, E., et al. IgE-mediated release of leukotriene C4, chondroitin sulfate E proteoglycan, beta-hexosaminidase, and histamine from cultured bone marrow-derived mouse mast cells. J Exp Med 1983; 157 : .189-201
17. Stevens, R.L., Razin, E., Austen, K.F., Hein, A., Caulfield, J.P., Seno, N., et al. Synthesis of chondroitin sulfate E glycosaminoglycan onto p-nitrophenyl-beta-D-xyloside and its localization to the secretory granules of rat serosal mast cells and mouse bone marrow-derived mast cells. J Biol Chem 1983; 258: 5977-84.

18. Razin, E., Marx, G. Thrombin-induced degranulation of cultured bone marrow-derived mast cells. J Immunol 1984; 133: 3282-5.
19. Razin, E., Romeo, L.C., Krilis, S., Liu, F.T., Lewis, R.A., Corey, E.J., et al. An analysis of the relationship between 5-lipoxygenase product generation and the secretion of preformed mediators from mouse bone marrow-derived mast cells. J Immunol 1984; 133: 938-45.
20. Razin, E., Stevens, R.L., Austen, K.F., Caulfield, J.P., Hein, A., Liu, F.T., et al. Cloned mouse mast cells derived from immunized lymph node cells and from foetal liver cells exhibit characteristics of bone marrow-derived mast cells containing chondroitin sulphate E proteoglycan .Immunology 1984; 52: 563-75.
21. Razin, E., Ihle, J.N., Seldin, D., Mencia-Huerta, J.M., Katz, H.R., LeBlanc, P.A., et al. Interleukin 3: A differentiation and growth factor for the mouse mast cell that contains chondroitin sulfate E proteoglycan. J Immunol 1984; 132: 1479-86.
22. Stevens, R.L., Bloes, W.F., Seldin, D.C., Razin, E., Katz, H.R., Austen, K.F. Inhibition of proliferation of mouse T cell-dependent bone marrow-derived mast cells by rat serum does not change their unique phenotype. J Immunol 1984.2674-80 :133 ;
23. Pervin, R., Kanner, B.I., Marx, G., Razin, E. Thrombin-induced degranulation of cultured bone marrow-derived mast cells: effect on calcium uptake. Immunology 1985; 56: 667-72.
24. Razin, E., Baranes, D., Marx, G. Thrombin-mast cell interactions. Binding and cell activation. Exp Cell Res 1985; 160: 380-6.
25. Razin, E. Activation of the 5-lipoxygenase pathway in E-mast cells by peanut agglutinin. J Immunol 1985; 134: 1142-5.
26. Shoam, H., Razin, E. BW755C inhibits the 5-lipoxygenase in E-mast cells without affecting degranulation. Biochim Biophys Acta 1985; 837: 1-5.
27. Baranes, D., Matzner, J., Razin, E. Thrombin-induced calcium-independent degranulation of human neutrophils. Inflammation 1986; 10: 455-61.
28. Baranes, D., Liu, F.T., Razin, E. Thrombin and IgE antigen induce formation of inositol phosphates by mouse E-mast cells. FEBS Lett 1986; 206: 64-8.
29. Baranes, D., Liu, F.T., Marx, G., Shalit, M., Razin, E. Regulation of thrombin-induced mast cell degranulation by zinc and manganese. Immunol Lett 1986; 12: 95-9.
30. Eliakim, R., Gilead, L., Ligumsky, M., Okon, E., Rachmilewitz, D., Razin, E. Histamine and chondroitin sulfate E proteoglycan released by cultured human colonic mucosa: indication for possible presence of E mast cells. Proc Natl Acad Sci U S A 1986; 83: 461-4.
31. Razin, E., Baranes, D. Thrombin-induced lysozyme release from human neutrophils and phosphatidylinositol breakdown in cultured mouse E mast cells. Adv Prostaglandin Thromboxane Leukot Res 1986; 16.135-40 :
32. Shalit, M., Shoam, H., Seno, N., Razin, E. New role for heparan sulfate: regulator of leukotriene generation in mouse E-mast cells. Life Sci 1986; 39: 903-10.
33. Gilead, L., Livni, N., Eliakim, R., Ligumsky, M., Fich, A., Okon, E., Rachmilewitz, D., Razin, E. Human gastric mucosal mast cells are chondroitin sulphate E-containing mast cells. Immunology 1987; 62: 23-8.
34. Lerner, M., Samuni, A., Razin, E. Stimulation of murine cultured mast cells under anaerobic conditions: inhibition of arachidonic acid release .Immunol Lett 1987; 16: 121-4.
35. Eliakim, R., Karmeli, F., Razin, E., Rachmilewitz, D. Role of platelet-activating factor in ulcerative colitis. Enhanced production during active disease and inhibition by sulfasalazine and prednisolone. Gastroenterology 1988; 95: 1167-72.
36. Gilead, L., Rahamim, E., Ziv, I., Or, R., Razin, E. Cultured human bone marrow-derived mast cells, their similarities to cultured murine E-mast cells. Immunology 1988; 63: 669-75.
37. Matzner, Y., Cohn, M., Hyam, E., Razin, E., Fuks, Z., Buchanan, M.R., et al. Generation of lipid neutrophil chemoattractant by irradiated bovine aortic endothelial cells. J Immunol 1988; 140: 2681-5.

38. Bashkin, P., Razin, E., Eldor, A., Vlodavsky, I. Degranulating mast cells secrete an endoglycosidase that degrades heparan sulfate in subendothelial extracellular matrix. Blood 1990; 75: 2204-12.
39. Chaikin, E., Ziltener, H.J., Razin, E. Protein kinase C plays an inhibitory role in interleukin 3- and interleukin 4-mediated mast cell proliferation. J Biol Chem 1990; 265: 22109-16.
40. Davidson, S., Gilead, L., Amira, M., Ginsburg, H., Razin, E. Synthesis of chondroitin sulfate D and heparin proteoglycans in murine lymph node-derived mast cells. The dependence on fibroblasts. J Biol Chem 1990; 265: 12324-30.
41. Gilead, L., Bibi, O., Razin, E. Fibroblasts induce heparin synthesis in chondroitin sulfate E containing human bone marrow-derived mast cells. Blood 1990; 76: 1188-95.
42. Razin, E. Culture of bone marrow-derived mast cells: a model for studying oxidative metabolism of arachidonic acid and synthesis of other molecules derived from membrane phospholipids. Methods Enzymol 1990; 187: 514-20.
43. Baranes, D., Razin, E. Protein kinase C regulates proliferation of mast cells and the expression of the mRNAs of fos and jun proto-oncogenes during activation by IgE-Ag or calcium ionophore A23187. Blood 1991; 78: 2354-64.
44. Razin, E., Leslie, K.B., Schrader, J.W. Connective tissue mast cells in contact with fibroblasts express IL-3 mRNA. Analysis of single cells by polymerase chain reaction. J Immunol 1991; 146: 981-7.
45. Baranes, D., Lewin, I., Razin, E. Serum modulates mast cell responses to IgE antigen stimulation. Eur J Immunol 1993; 23: 291-4.
46. Lewin, I., Nechushtan, H., Ke, Q., Razin, E. Regulation of AP-1 expression and activity in antigen-stimulated mast cells: the role played by protein kinase C and the possible involvement of Fos interacting protein. Blood 1993; 82: 3745-51.
47. Ophir, A., Berenshtein, E., Ziltener, H.J., Razin, E. 5-fluorouracil and mast cell precursors in mice. Exp Hematol 1993; 21: 1558-62.
48. Chaikin, E., Hakeem, I., Razin, E. Enhancement of interleukin-3-dependent mast cell proliferation by suppression of c-jun expression. J Biol Chem 1994; 269: 8498-503.
49. Razin, E., Szallasi, Z., Kazanietz, M.G., Blumberg, P.M., Rivera, J. Protein kinases C-beta and C-epsilon link the mast cell high-affinity receptor for IgE to the expression of c-fos and c-jun. Proc Natl Acad Sci U S A 1994; 91: 7722-6.
50. Chaikin, E., Hakeem, I., Razin, E. The incapability of interleukin-4 to induce AP-1 activity in murine mast cells. Int Arch Allergy Immunol 1995; 107: 57-9.
51. Cruz, J.R., Cano, F., Razin, E., Acheson, D.W., Keusch, G.T. Fecal excretion of leukotriene C4 during human disease due to Shigella dysenteriae. J Pediatr Gastroenterol Nutr 1995; 20: 179-83.
52. Razin, E., Pecht, I., Rivera, J. Signal transduction in the activation of mast cells and basophils. Immunol Today 1995; 16: 370-3.
53. Lewin, I., Jacob-Hirsch, J., Zang ,Z.C., Kupershtein, V., Szallasi, Z., Rivera, J., Razin, E. Aggregation of the FcεRI in mast cells induces the synthesis of Fos-interacting protein and increases its DNA binding-activity: the dependence on protein kinase C-beta. J Biol Chem 1996; 271: 1514-9.
54. Nechushtan, H., Razin, E. Regulation of mast cell growth and proliferation. Crit Rev Oncol Hematol 1996; 23: 131-50.
55. Nechushtan, H., Soreq, H., Kuperstein, V., Tshori, S., Razin, E. Murine and human mast cell express acetylcholinesterase .FEBS Lett 1996; 379: 1-6.
56. Ligumsky, M., Kuperstein, V., Nechushtan, H., Zhang, Z., Razin, E. Analysis of cytokine profile in human colonic mucosal Fc epsilonRI-positive cells by single cell PCR: inhibition of IL-3 expression in steroid-treated IBD patients. FEBS Lett 1997; 413: 436-40.

57. Nechushtan, H., Zhang, Z., Razin, E. Microphthalmia (mi) in murine mast cells: regulation of its stimuli-mediated expression on the translational level. Blood 1997; 89: 2999-3008.
58. Frenkel, S., Kay, G., Nechushtan, H., Razin, E. Nuclear translocation of upstream stimulating factor 2 (USF2) in activated mast cells: a possible role in their survival. J Immunol 1998; 161: 2881-7.
59. Nechushtan, H., Razin, E. Deciphering the early-response transcription factor networks in mast cells. Immunol Today 1998; 19: 441-4.
60. Zhang, Z.C., Nechushtan, H., Jacob-Hirsch, J., Avni, D., Meyuhas, O., Razin, E. Growth-dependent and PKC-mediated translational regulation of the upstream stimulating factor-2 (USF2) mRNA in hematopoietic cells. Oncogene 1998; 16: 763-9.
61. Nechushtan, H., Razin, E. Early-Response genes in mast cell activation. In: *Razin, E., Rivera, J., eds. Signal transduction in mast cells and basophils. New York Berlin Heidelberg: Springer-Verlag, 1999; Section 4: 323-7.
62. Razin, E., Zhang, Z.C., Nechushtan, H., Frenkel, S., Lee, Y.N., Arudchandran, R., et al. Suppression of microphthalmia transcriptional activity by its association with protein kinase C-interacting protein 1 in mast cells. J Biol Chem 1999.34272-6 :274 ;
63. Bauer, O., Razin, E. Mast Cell-Nerve Interactions. News Physiol Sci 2000; 15: 213-8.
64. Frenkel, S., Kay, G., Razin, E. Early response transcription factors in activated mast cells. MAI 2000; 1: 57-8.
65. Nechushtan, H., Leitges, M., Cohen, C., Kay, G., Razin, E. Inhibition of degranulation and interleukin-6 production in mast cells derived from mice deficient in protein kinase Cbeta. Blood 2000; 95: 1752-7.
66. Nechushtan, H., Razin, E. Studies of different aspects of the role of protein kinase C in mast cells. Int Arch Allergy Immunol 2001; 124: 130-2.
67. Levy, C., Nechushtan, H., Razin, E. A new role for the STAT3 inhibitor, PIAS3: a repressor of microphthalmia transcription factor. J Biol Chem 2002; 277: 1962-6.
68. Nechushtan, H., Razin, E. The function of MITF and associated proteins in mast cells. Mol Immunol 2002; 38: 1177.
69. Cohen-Saidon, C., Nechushtan, H., Kahlon, S., Livni, N., Nissim, A., Razin E. A novel strategy using single chain antibody to show the importance of Bcl-2 in mast cell survival. Blood 2003; 102: 2056.
70. Levy, C., Sonnenblik, A., Razin, E. Phosphorylation and the Zip domain of MITF play a role in its transcriptional inhibition by PIAS3. Mol Cell Biol 2003, 23: 9073.
71. * Lee, Y.N., Nechushtan, H., Figov, N., Razin, E. The function of lysyl-tRNA synthetase and Ap_4A as signaling regulators of MITF activity in FCεRI-activated mast cells. Immunity 2004; 20: 145-51.
72. Lee, Y.-N., Tuckerman, J., Nechushtan, H., Schutz, G., Razin*, E.,Angel, P. c-Fos as a regulator of degranulation and cytokine production in FcεRI activated mast cells. J. Immunol. 2004; 173: 2571-7.
73. Sonnenblick, A., Levy, C., Razin, E. Interplay between MITF, PIAS3, and STAT3 in Mast Cells and Melanocytes. Mol Cell Biol 2004; 24: 10584-92.
74. Miller, A.J., Levy, C., Davis, I.J., Razin, E., Fisher, D.E. Sumoylation of MITF and its related family members TFE3 and TFEB. J Biol Chem 2005; 280: 146-55.
75. Sonnenblick, A., Levy, C., Razin, E. Regulation of MITF and STAT3 in mast cells by monomeric IgE .. J of .Immunology 2005175:1450-1455.
76. Lee, Y and Razin, E. The non-conventional involvement of LysRS in molecular mechanism of USF2 transcriptional activity in activated FcεRI mast cells. Mol Cell Biol . 2005 25: 8904_8912.

77. Cohen-Saidon, C; Carmi, I; Keren, A and Razin E; The anti-apoptotic function of Bcl-2 in mast cells is dependent on its association with Heat Shock Protein 90β. Blood 2006 107: 1413-1420.

78. Levy, C; Lee, Y-N; Nechushtan, H; Sonnenblick, A; Schueler-Furman, O; Hacohen S and Razin, E. Short PIAS3 motif interferes with transcriptional activity of MITF and STAT3 in mast cells and melanocytes" Blood 2006 107: 2839-2845.
79. Cohen-Saidon C and Razin, E. The involvement of Bcl-2 in mast cell apoptosis. In "Mast Cell and Basophils: Development activation and role in allergic/autoimmune disease.Novartis Foundation Symposium 271.2006 WILEY. P191-197.

80. Nechushtan, H and Razin, E. Mast cells: must they always be different? 2006 Blood107: 1-2.

81. ** Tshori, S; Gilon, D; Beeri, R; Nechushtan, H; Kaluzhny, D; Pikarsky, E and Razin, Ehud. The transcription factor MITF regulates cardiac grouth and hypertrophy. Journal of Clinical Investigation., 2006, 116:2673-2681.

82. The microphthalmia transcription factor isoforms in mast cells and in the heart: Sagi Tshori; Amir Sonnenblick; Nurit Yanay-Cohen;
Gillian Kay; Hovav Nechushtan and Ehud Razin. 2007 Molecular and Cellular Biology in press.

* Faculty of 1000
** Faculty of 1000 top 10 percent.